Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Public Notice Seeking Comment on Bidirectional Sharing Pursuant to RAY BAUM'S Act of 2018	)	GN Docket No. 19-128
	)	
	)	

REPLY COMMENTS OF
LOCKHEED MARTIN CORPORATION

I. INTRODUCTION

Lockheed Martin Corporation ("Lockheed Martin") hereby submits reply comments in response to the Federal Communications Commission ("FCC") Public Notice issued by the Office of Engineering and Technology and the Wireless Telecommunications Bureau related to bidirectional sharing, pursuant to the RAY BAUM's Act of 2018 ("Act").[1] The Act directs the FCC to collaborate with the National Telecommunications and Information Administration ("NTIA") to develop and submit a report to Congress that both "considers the regulatory certainty that commercial spectrum users and Federal entities need to make longer-term investment decisions for shared access to be viable" and "examines aspects of providing Federal entities flexible access to non-Federal spectrum on a shared basis across a range of short-, mid-, and long-range timeframes."[2]

Lockheed Martin is a publicly-traded, global security and aerospace company that is principally engaged in the research, design, development, manufacture, integration, and

[1] *Office of Engineering and Technology and Wireless Telecommunications Bureau Seek Comment on Bidirectional Sharing Pursuant to RAY BAUM'S Act of 2018*, Public Notice, DA 19-371 (rel. May 1, 2019); Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018, Pub. L. 115-141, § 610, 132 Stat. 1080, 1108 (2018).

[2] *Id.*

sustainment of advanced technology systems, products, and services. Lockheed Martin's technology innovation relies heavily upon authorized access to spectrum resources under multiple FCC services. Furthermore, as a commercial entity that manufactures military, civil, and commercial use platforms and systems at various locations in the United States, Lockheed Martin collaborates closely with its customers to ensure access to spectrum resources necessary for both research and development efforts and long-term deployment of the equipment and solutions, including in spectrum bands managed by NTIA. Lockheed Martin is, accordingly, well-suited to comment on the potential benefits of efforts by the FCC and NTIA to augment sharing regimes that rely upon both Federal and non-Federal spectrum resources.

II. FOR BIDIRECTIONAL SHARING TO BE EFFECTIVE, ANY REGIME MUST BE TRULY BIDIRECTIONAL

Lockheed Martin appreciates the opportunity to comment on the nature and mechanics of bidirectional sharing. Indeed, the notion of such sharing is a key element of the Administration's National Spectrum Strategy[3] and has been under consideration by Congress and within numerous Federal agencies – including the Department of Defense – in recent years.

In light of its significant experience in working with Federal users as customers, Lockheed Martin strongly recommends that report language to Congress make clear the expectation that bidirectional sharing as a national spectrum policy objective can only be effective when Federal spectrum users are afforded access to non-Federal spectrum resources, *as well as* the reverse, to avert what NTIA has referred to in the past as a "uni-directional sharing trend."[4]

[3] *Developing a Sustainable Spectrum Strategy for America's Future*, 83 Fed. Reg. 54513 (Oct. 25, 2018).

[4] *See* "Building Spectrum Policy to Meet Advanced Communications Capabilities", Remarks of David J. Redl, Assistant Secretary of Commerce for Communications and Information (Jun. 21, 2018) ("Traditionally, spectrum

Lockheed Martin notes that several comments submitted in response to the FCC's Public Notice focus exclusively on non-Federal user access to Federal spectrum bands. The unique nature of spectrum management in the United States requires, however, that a report from FCC and NTIA to Congress give full recognition that Federal users also have increasing spectrum requirements as future government communications, sensing, positioning, and navigation systems are developed and deployed in support of military, national security, aviation, critical infrastructure, and public safety functions.

III. REGULATORY INCENTIVES ARE A KEY ELEMENT TO ESTABLISHING AN EQUITABLE SHARING ENVIRONMENT

The pace of technology development is increasing, in particular with the projected deployment of massive IoT systems in a 5G ecosystem. This situation presents opportunities for spectrum policymakers to create incentives for Federal and non-Federal users to share spectrum bands for which allocations currently strictly limit access to users of a single regulatory classification. Such incentives should encourage the development of innovative sharing mechanisms and techniques, while maintaining protections for incumbent users. One such opportunity for a technological solution to sharing could be the result of the FCC exploring how "sharing by design" could be accomplished by updating current equipment certification rules to encourage spectrum sharing capabilities built into future radios and systems.

sharing generally has allowed commercial users to gain new access to bands where they previously had limited or no access at all. Most often, Federal agencies are the incumbents that are required to 'make room' for the new entrants. If we continue on this path, however, it will lead to significantly constrained access for Federal agencies with missions that are critical to the health and safety of the American people. While we may uncover incremental ways for agencies to use the spectrum they have more efficiently, these opportunities are finite and will only become more so if the uni-directional sharing trend continues.").

In addition to technological alternatives to support spectrum sharing, including dynamic frequency allocation mechanisms, FCC and NTIA could consider expanding existing regulatory arrangements by way of a two-prong sharing system. For example, regulatory authority could at first be extended to permit spectrum sharing on a short-term basis – perhaps mirroring the current leasing mechanism that the FCC employs under Part 1 of its Rules for wireless services[5] – to afford additional flexibility and make spectrum available for testing at geographic locations where current spectrum inventories, either for Federal or non-Federal users, have few reserves. In time, a mechanism could be developed to enable longer-term sharing arrangements. This entire approach could readily leverage the Commerce Spectrum Management Advisory Committee's work on bidirectional sharing.[6]

Lockheed Martin notes that other commenters, in response to the FCC's Public Notice, rightly conclude that regulatory certainty is an imperative condition for these types of innovative solutions to be fostered.[7] To that end, Lockheed Martin believes that the establishment and articulation of clear incentives for all spectrum stakeholders is an important means of ensuring regulatory certainty and that FCC and NTIA should emphasize in its report the importance of fostering such a sharing environment through use of regulatory incentives.

IV. CONCLUSION

For the reasons set forth above, the Commission, working with NTIA, must make clear in its report to Congress that any bidirectional sharing arrangement take into consideration the needs of the entire spectrum user community, so that Federal and non-Federal users be subject to

[5] 47 CFR §§ 1.9001- 1.9080.

[6] Commerce Spectrum Management Advisory Committee, Spectrum Efficiency Subcommittee Report (July 2018).

[7] *See* Comments of the Boeing Company, at 3; Comments of the Telecommunications Industry Association, at 4.

a consistent regulatory framework and have parity of access to spectrum under different sharing regimes.

Respectfully submitted,

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